

MEMORANDUM

TO: Paul E. Foster, P.E.

THROUGH: Nancy E. Terranova

FROM: Shaikh A. Tayeb

SUBJECT: Title V Permit Renewal; *Draft Permit: AQM-003/00111-Renewal 1*
Delaware Solid Waste Authority-Cherry Island Landfill

DATE: October 16, 2006

Background

Cherry Island Landfill (CIL) is located at the Northern Solid Waste Management Center (NSWMC) in Wilmington, New Castle County, Delaware. CIL (the facility) is owned by the Delaware Solid Waste Authority (DSWA). Currently the facility is operated under a Title V permit which was issued on 12/2/98. The Department ("Air Quality Management" or "AQM") received three applications from DSWA as follows:

- Title V renewal application dated 2/9/06.
- Title V significant permit modification dated 11/22/05.
- Chesmont flare permit amendment application dated 7/20/06.

This memo addresses all applications shown above. Note that the information on Title V significant permit modification and the Chesmont flare permit amendment request is also incorporated into the draft Title V renewal permit.

The original Title V renewal application was submitted on 2/28/02 which was deemed complete by the Department on 7/30/02. Neither the draft nor the final renewal permit was issued to DSWA at that time. The reason is unknown to the author. Regulation 30, Section 7(c)(3) allows DSWA to operate the facility under existing Title V permit. The Company is current with Title V fees. Pasquale S. Canzano, the Chief Operating Officer, is the Responsible Official.

Title V renewal application-revised version

Since the original Title V renewal application was submitted in February 2002, an operating permit for two 3000 scfm open flares was issued to the Company. DSWA submitted a revised version of the renewal application dated 2/9/06 to the department. A meeting was held between DSWA and AQM to discuss the applications on 3/17/06.

- The Company is not subject to the requirements of Section 112(r) of the 1990 Clean Air Act.
- The Company has not registered with the State of Delaware "Regulations for the Management of Extremely Hazardous Substances."
- Title VI is not applicable to the facility.
- DSWA has not requested any information to be held confidential.

Correspondence Chronology

Table 1 shows a list of correspondences.

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Table 1: List of correspondences.

Date	Subject
10/20/05	AQM requested to resubmit the Title V renewal application by 12/26/05.
11/1/05	DSWA requested AQM to extend the deadline of the renewal application.
11/9/05	AQM extended the deadline until 2/10/06.
11/22/05	AQM received Title V significant permit modification dated 11/22/05.
2/10/06	DSWA submitted Title V renewal application dated 2/9/06.
5/26/06	AQM sent comments on the applications to DSWA.
6/7/06	DSWA responded on AQM comments.
6/13/06	DSWA requested via an email correspondence that the Chesmont flare be included in the facility wide NOx emissions limitations.
7/20/06	1) AQM received Chesmont flare permit amendment request dated 7/20/06. 2) AQM received Title V renewal application revision.
9/20/06	AQM received additional information on Chesmont flare permit amendment request dated 7/20/06.
9/20/06	DSWA submitted supplementary information on Chesmont flare emissions via email.
10/11/06	DSWA submitted supplementary information on Chesmont flare emissions via email.
10/13/06	DSWA submitted supplementary information on Chesmont flare emissions via email. This information is an updated summary of the previously submitted information dated 9/20/06 and 10/13/06 on Chesmont flare emissions.

DSWA's NSWMC is a major source because the facility meets the following three conditions of 40 CFR Part 60, Subpart Cc, *Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills*: the landfill has been accepting waste since November 8, 1987, the landfill has a design capacity greater than 2.5 million megagrams, and the landfill has a calculated nonmethane organic compound (NMOC) emission which exceeds 50 megagrams per year. The Company is a refuse system facility, primary SIC code 4953. The primary applicable requirements are State of Delaware Air Pollution Control Regulation No.s 1102, 4, 6, 8, 14, 19, 20, 30; and EPA Landfill Air Pollution Regulations 40 CFR Part 62, Subpart I, the related regulations 40 CFR Part 60, Subparts Cc and WWW, and Part 63, Subpart AAAA. Note that the approved Delaware 111(d) plan for Municipal Solid Waste Landfills-40 CFR Part 62, Subpart I is also an applicable requirement. Subpart WWW has been adopted by the state by reference (Reg. No. 20, Section 28). The attached draft permit includes federally enforceable conditions for emission limitations for the flares that are already permitted through appropriate permitting procedures, except that some emission limitations for Chesmont flare are amended based on DSWA's recent request.

Emission units information

Table 2 below shows a list of emission units.

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Table 2: Emission units.

Emission Units	Emission Unit Description
Emission Unit 1	Chesmont Engineering Candle Flare with a maximum rated gas flow of 1200 scfm
Emission Unit 2	Twelve (12) passive elevated combustion flares. (Emission Points 2 through 13.)
Emission Unit 3	Landfill and gas collection system.
Emission Unit 4	Gas treatment plant.
Emission Unit 5	East Flare with a maximum rated gas flow of 3000 scfm
Emission Unit 6	North Flare with a maximum rated gas flow of 3000 scfm

Existing Regulation No. 1102 permits

Table 3 below shows a list of existing Regulation No. 1102 (previously known as Regulation No. 2) operating permits.

Table 3: Existing Regulation No. 1102 operating permits.

Reference	Regulation No. 1102 Permit Designation
<u>APC-90/0133</u>	<u>APC-90/0133-Operation (Amendment 2)</u> , dated September 26, 1997. Chesmont Engineering candlestick flare with a maximum rated gas flow of 1200 scfm
<u>APC-95/0466</u>	<u>APC-95/0466-Operation</u> , dated May 15, 1995. Twelve (12) passive elevated combustion flares.
<u>APC-2004/0710</u>	<u>APC-2004/0710-Operation (NSPS)(MACT)</u> , dated September 28, 2005. Two (2) LFG Specialties open flares with a maximum rated gas flow of 3000 scfm each

Regulation No. 25, *Requirements for Preconstruction Review*, is not applicable to the facility at this time. The attached draft permit incorporates federally enforceable emission limitations (already permitted) that do not trigger Section 2 or 3 of this Regulation. Note that since the issuance of the original Regulation No. 30 operating permit, a federally enforceable construction permit for two enclosed flares with a hydrogen sulfide pretreatment system was issued to DSWA on May 24, 2006. DSWA took voluntary restrictions for this construction permit to be under the major source threshold limits. The construction will not cause a significant net emission increase at the facility which would trigger the Emission Offset Provisions (EOP) of Regulation No. 25, Section 2 or the Prevention of Significant Deterioration (PSD) of Air Quality requirements of Regulation No. 25, Section 3.

CAM applicability determination

40 CFR Part 64, Compliance Assurance Monitoring (CAM), does not apply to any of the emission units at this facility. The facility is exempt from CAM according to Section 64.2(b)(1)(i) since the facility is subject to an emission limitation or standard proposed by the Administrator after November 15, 1990 pursuant to Section 111 or 112 or the Act.

Title V significant permit modification

Condition 1.2 of Permit APC-2004/0710-Operation (NSPS)(MACT) dated 9/28/05 requires DSWA to submit a complete application for a significant permit modification within sixty (60) days of the issuance of this permit.

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DSWA submitted the required permit application on 11/22/05. The purpose of this application is to incorporate all federally enforceable permit conditions of the above mentioned operating permit for two (3000 scfm each) open flares into the Title V permit. Condition 3-Table 1(e) outlines these conditions (See Pages 36 through 41 of the attached draft permit).

Chesmont flare permit amendment

DSWA submitted an application dated July 20, 2006 to amend their existing Chesmont flare operating permit. The amendment is proposed to revise emission limitations for the flare shown in Table 4.

Table 4: Chesmont flare emissions.

	Existing		Amended	
	lbs/hr	tons/yr	lbs/hr	tons/yr
CH ₄	18.3	79.4	28.2	79.4
	-	-	1.38	17.9 (All 3 flares combined. See Note below)
SO ₂	0.411	1.8	13.1	1.8
CO	0.75	3.28	25.5	3.5
HCl	0.094	0.41	0.07	0.41
H ₂ S	0.0074	0.032	0.14	0.032
PM	0.0024lbs/hr	20.97 (lbs/yr)	0.57	0.08
NMOC	-	-	0.085	0.01

Note

- The total rolling 12-month LFG flow through the flare is limited to 20x10⁶ scf/yr (566254 m³/yr). DSWA took this limitation into account in order to stay within the previously established SOx limit of 1.8 tons/yr for this control device. (Reference: Permit APC-90/0133-Operation (Amendment 2) dated 11/26/97, Condition No. 1).
- NOx emissions from Chesmont flare are 1.38 lbs/hr. However, rolling 12-month NOx emissions are restricted to 17.9 tons which is the permitted yearly total NOx emissions for two existing open flares (3000 scfm each) [Reference: Permit APC-2004/0710-Operation (NSPS)(MACT) dated 11/28/05, Condition 2.1.1]. DSWA proposed to stay within this limit for all three flares combined. Therefore, the combined NOx emissions from Chesmont and two open flares shall not exceed 17.9 tons per rolling 12-month period. (See Condition 3-Table 1(a)(3)(i), Page 20).
- (1) SOx emissions (1.8 tons/rolling 12-month period) are already federally enforceable through appropriate permitting process.
- (2) NOx emissions (17.9 tons/rolling 12-month period) for two open flares are federally enforceable too. See reference above. DSWA took voluntary restrictions on NOx emissions from Chesmont flare in order to be under this limit. An email correspondence received from DSWA on 6/13/06, the Company requested AQM to include Chesmont flare NOx emissions with two other existing open flares (North and East) as part of the facility wide NOx emissions of 17.9 tons/year. This

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information is incorporated into the Title V draft permit (see Condition 3-Table 1(e)(3)(i), Page 40). Note that the original Chesmont flare permit APC-90/0133-Operation (Amendment 2) dated 9/26/97 does not have NO_x limitations. The flare is not regularly used. It is used as last option among all the existing flares at the site.

- As per the amendment request, where the yearly emission rates are below the existing permitted value, the Company proposed to remain at the existing permitted value for those emissions.
- By limiting the total yearly LFG flow through the flare and by following the flare operating parameters outlined in the attached draft permit will assure the Department that all other emission limitations listed in Table 4 will unlikely exceed. DSWA would like to remove the Chesmont flare from the site in future.

Insignificant activities

CIL has one diesel (No. 2 oil) fired 55 KW (73.75 hp) emergency generator that is used at the scale house during power outages. In the draft permit, the emergency generator is listed under insignificant activities in accordance with Appendix A, Section (b)(2) of Regulation 30. The facility's total NO_x emissions do not exceed the major source threshold of 25 tons/yr. Note that the equipment is exempt as per Regulation 1102, Appendix A because the fuel burning equipment has an engine power rating <450 hp. However, the equipment shall follow the definition of 'emergency generator' and the new requirement for sulfur content ($\leq 0.05\%$ sulfur by wt) as specified in Regulation 1144, Section 5.1. (See Pages 41 through 42 of the attached draft permit).

Items that are new in the *draft* permit

Compared to the existing Title V operating permit, the following items, as outlined in Table 5, are new in the draft operating permit.

Table 5: Newly added items in *draft* operating permit.

<u>Item No.</u>	<u>Subject</u>	<u>Reference</u> (Draft AQM-003/00111-R1)
1	Regulation No.1102 permits identification. Permit: APC-2004/0710-Operation (NSPS)(MACT)	Condition 1(b), Page 3.
2	Risk Management Plan submissions.	Condition 2(p)(1) & (2), Page 10.
3	General reporting requirement.	Condition 3(c)(2)(i), Page 13.
4	Emission Unit 1 (Chesmont flare): Emission limitations per rolling 12-month basis and the compliance methods.	Conditions 3-Table 1(a)(3)(i) &(ii), Page 20.
5	Emission Unit 3 (Landfill and Landfill Gas Collection System): <u>MACT requirement</u> (compliance reporting every 6 months).	Condition 3-Table 1(c)(1)(v)(B), Page 23.
6	Emission Unit 3 (Landfill and landfill gas collection system): Cover integrity and cover repairs.	Condition 3-Table 1(c)(1)(i) (G), Page 24.
7	Emission Unit 3 (Landfill and landfill gas collection system): Well decommissioning.	Condition 3-Table 1(c)(5), Page 31.
8	Emission Unit 3 (Landfill and landfill gas collection	Condition 3-Table 1(c)(6), Page

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	system): <u>MACT requirement</u> (SSM Plan).	32.
<u>Item No.</u>	<u>Subject</u>	<u>Reference</u>
9	Emission Unit 4 (Gas Treatment Plant): LFG collection system improvement (process LFG at a rate of 12,000 scfm).	Condition 3-Table 1(d)(1)(E), Page 36.
10	Emission Units 5 & 6: North flare and East flare.	Condition 3-Table 1 (e), Pages 36 through 41.
11	Facility wide NOx emissions.	Condition 3-Table 1(e)(3)(i), Page 41.
12	Insignificant activities	Condition 3-Table 1(f), Page 41.
13	Facility wide: State enforceable only-Odor (Monitoring).	Conditions 3-Table 1(g)(3)(iii), Page 42.

Note

- As per the AQM letter dated 2/25/02, signed by John Blevins, Director, the compliance certification/reports submittal dates are as follows: Semi-annual reports: 3/31 and 9/31, and Annual compliance certification: 3/31.
- Passive flares are used as needed to control odor when landfill gas wells are disconnected due to landfilling operations. These flares are for short term use only. CIL is allowed to use maximum up to 12 passive flares at the site. As per AQM-003/00111 dated 12/2/98, each passive flare is rated at 120 scfm. Exhibit W-2 of the Title V permit renewal application lists each passive flare with a maximum flow rate of 140 scfm. As per the manufacturer specification, each flare can handle up to 140 scfm of LFG flow with 98% combustion efficiency. The operational requirements of the passive flares have not been changed. The flares can still achieve 98% combustion efficiency by following the flare operational and maintenance procedures as recommended by the manufacturer.

Items that are not included into the draft Title V renewal permit

Table 6: Items from the original Title V permit that are not included into the draft permit.

<u>Original Title V Permit Condition No.s</u>	<u>Condition</u>	<u>Deleted item and reason</u>
Condition 3-Table 1(c)(1)(v)(A)	The Company shall submit an NMOC emission rate report to the Department initially and annually thereafter,	Requirement for the <i>initial</i> /NMOC Emission Rate Report is deleted from the draft permit. The reports were required to be submitted to the Department initially and annually thereafter until the collection and control system was fully operational and in compliance with Subpart Cc. Since the collection and control system have been installed and it is fully operational, this initial report is no longer required to be submitted. However, DSWA is required to submit an annual NMOC report to the Department. Note that the Company also submits an annual emission inventory report each year to the Department's Emission Inventory Group which includes NMOCs. Furthermore, Condition 5.3.4 of APC-2004/0710-Operation requires DSWA to calculate the monthly and rolling 12-month total NMOCs.

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		The information shall be recorded each month in a log.
<u>Original Title V Permit Condition No.s</u>	<u>Condition</u>	<u>Deleted item and reason</u>
Condition 3-Table 1(c)(1)(v)(B)	The Company shall submit to the Department annual reports of the recorded information in (1) through (6) below. The initial annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under Condition 3 - Table 1(c)(5).	As per the original Tile V permit issued in 1998, an initial annual report submission with performance test results within 180 days of installation is no longer necessary. This condition is for the installation and initial start-up of the collection and control system.
Condition 3-Table 1(c)(2)(i)(D)	Additional wells are not required to be installed during the first 180 days after gas collection system start-up.	See comment above.
Condition 3-Table 1(d)(1)(i)(D)	All landfill gas flow shall be diverted to the flare system for combustion within eight (8) hours of gas compression plant shutdown. The landfill gas shall be combusted in the flare until the gas flow is restored to the plant.	This condition is updated to make a consistency with previously issued federally enforceable permit for two open flares as follows: Landfill gas flow shall be diverted to the flare system for combustion within one (1) hour of gas compression plant shutdown during normal operating hours and within four (4) hours outside of normal operating hours. The landfill gas shall be combusted by the flares until the gas is restored to the plant. Normal operating hours shall mean Monday through Saturday, 0700 hours until 1500 hours, excluding holidays and weather-related landfill closings. [Reference Permit 2004/0710-Operation(NSPS)(MACT), Conditions 3.1.2.1, 3.1.2.2 and 3.1.2.3]

MACT requirements

The following two MACT requirements are added to the attached draft permit:

- Compliance reporting every 6 months. [Condition 3-Table 1(c)(1)(v)(B), Page 23.]
- Startup, Shutdown and Malfunction plan (SSM plan). [Condition 3-Table 1(c)(6), Page 32.]

Operational flexibility

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No operational flexibility other than the standard language outlined in Condition 4, Page 46 of the draft permit was requested.

Compliance schedule

The Company is in compliance with the applicable requirements. No compliance schedule was submitted.

Permit shield

No permit shield has been requested. The permit shield option of Regulation No. 30, Section 6(f) provides that compliance with the terms and conditions of the permit shall constitute compliance with 7 Del. C., Chapter 60, for the discharge of any air contaminant specifically identified in the permit application as of the date of permit issuance. This permit does not provide a permit shield.

Recommendation

It is recommended that the attached draft permit renewal be advertised. In accordance with the provisions of EPA's operating permit program promulgated in 40 CFR Part 70, the states of Maryland, New Jersey and Pennsylvania will be notified of intent to approve a permit renewal for DSWA's Northern Solid Waste Management Center. In addition, a copy of the draft permit renewal will be sent to Mr. Pasquale Canzano, the responsible official for Delaware Solid Waste Authority. A copy of the draft permit and the technical memorandum will be sent to the EPA Region III Office for comments.

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pc: Dover Title V File

**TITLE V PERMIT REVIEW
PERMIT APPLICATION CHECKLIST**

STATE: DE

SOURCE NAME: Delaware Solid Waste Authority-Cherry Island landfill

AFS PLANT ID: 1000300111

SOURCE TYPE: Municipal Solid Waste Disposal

PERMIT #: AQM-003/00111(R1)

SIC #: 4953

SOURCE LOCATION (COUNTY): New Castle, DE

I. Is this a general permit? If yes, which one? (Go to Part III).....NO
If no, go to Part II.

II. PROGRAM IMPLEMENTATION

Does this permit contain "streamlined limits" (per White Paper #2).....NO

Does this permit contain requirements/provisions for:

1. Periodic Monitoring.....YES
2. NESHAP/MACT (if so, list subparts).Subpart AAAAYES
3. Case-by-Case MACT.....NO
4. NSPS (if so, list subparts).Subpart Cc.....YES
5. PSD/NSR.....NO
6. Acid Rain Phase II Permit.....NO
7. Potential-to-Emit Limits.....YES
8. Consent Order Agreement.....NO
9. NO_x RACT.....NO
10. VOC RACT.....NO
11. Does permit application contain confidential information?.....NO

III. COMPLIANCE STATUS

Is the Source subject to a compliance schedule?.....NO

IV. EPA REVIEW

1. Do you want EPA to review all or part of this permit?.....YES
2. Are there other issues you would like to call to EPA's attention?.....NO

STATE CONTACT: Shaikh A. Tayeb
PHONE: 302-323-4542

DATE: October 12, 2006.

(for EPA use only) dated entered
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